Notes on South Australian Marine Mollusca, with Descriptions of New Species.—Part VII.

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Plate XXIX.

[Read September 3, 1907.]

Cyclostrema homalon, n. sp. Pl. xxix., figs. 3, 4.

Shell small, thin, flatly depressed, of 4½ whorls. Apical whorls convex smooth. Spire whorls flat excavately sloping towards the upper suture, rounded towards the lower, with a spiral near the upper suture, which is well adpressed so as to simulate another spiral, and two near the lower suture. Body whorl large, with about seven spirals, the lowest forming a basal carina, starting where the inner lip joins the body whorl at its base, and ending at the outer third of the basal lip. Umbilicus large and perspective, with about ten spiral liræ. There is a smooth area between the outermost and the basal carina. The aperture is quadrate, with rounded angles, and lies in an oblique vertical plane. The labrum is excavated at a little distance from the suture, then projects curvedly forwards, and then continuously retrocedes. The inner lip is applied to the base, so that the aperture is not quite circular or complete. Very fine crowded axial microscopic markings, which do not follow the sinuosities of the outer lip.

Dim.—Largest diameter, 2·7 mm.; smallest, 2 mm.; height, 1 mm.

Diagnosis.—*C. harriettæ*, Petterd, is closely allied, but has a less open umbilicus, and its labrum is not sinuous on the dorsum, but has a continuous convex curve; and the intra-umbilical spirals are much finer and more crowded.

Variations.—One variety attains a size of 4·1 mm. in diameter, and is more solid. Its aperture is rounder; the umbilicus wider and more perspective, is radially wrinkled, and may not have so many spiral liræ. There may be no spiral lira near the suture on the whorls, nor any elsewhere, or there may be several on the sides of the body-whorl. Some show the basal carina distinctly, others feebly, and others not at all; but the sinuosity of the lip is present and the miscroscopic radial markings.

Locality.—Type, 62 fathoms north-west of Cape Borda; var., 130 fathoms, Cape Jaffa.

Cyclostrema pachyston, n. sp. Pl. xxix., fig. 10.

Shell orbicular, depressed, of five whorls, spire slightly elevated. First two and a half whorls convex, smooth, followed by a spire-whorl, with five equidistant spiral liræ. Body-whorl upper surface flatly sloping, nearly smooth, with fine curved axial wrinkles antecurrent just below the suture, then obliquely retrocedent. Side convex, with four well-marked spiral liræ to the periphery. Base rounded with about eight spiral cords, very flat and low, separated only by incisions. Umbilicus minute, nearly filled up by flat callus expansions of the inner lip, producing rude curved radial wrinkles. Aperture round; outer lip oblique, thin and simple, somewhat crenulated outside by the liræ; basal part thicker and smooth; inner lip thin where applied to the base of the body-whorl, and expanding beyond the concave columella as a thick shiny smooth callus to the centre of the perforation.

Dim.—Greatest diameter, 2·15 mm.; smallest, 2 mm.; height, 1·5 mm.

Locality.—62 fathoms, north-west of Cape Borda, 10 dead.

The largest example is 3·2 mm. in diameter. In the larger shells the perforation becomes more open, and its sides are radially wrinkled.

Cyclostrema denselaminatum, n. sp. Pl. xxix., fig. 9.

Shell opaque-white, minute, turbinate, of four whorls, nearly detached, rapidly increasing. Protoconch one and three-quarter whorls, flatly convex, smooth. Spire-whorls convex. Sutures deep. Aperture circular, complete, detached from the base of the body-whorl; border simple. Umbilicus moderate, perspective. Sculpture begins abruptly from the protoconch; valid axial laminæ, about as high as wide, and one-half or one-third as wide as the interspaces, crowded, nearly 50 in the body-whorl, completely encircling the whorls and so visible in the umbilicus. Fine hair-like spiral threads, about 40 in the body-whorl, less crowded on the base and near the suture than on the periphery.

Dim.—Greatest diameter, 1·55 mm.; smallest, 1·4 mm.; height, 1·1 mm.

Diagnosis.—*Scala nepeanensis*, Gatliff, is more elate and has fewer axial laminæ. *Cyclostrema angeli*, Ten. Woods, is more elate and has a smaller perforation. *C. johnstoni*, Beddome, is similar in shape and has crowded axials, but has no spirals.

Locality.—Type from 62 fathoms, north-west of Cape Borda; Backstairs Passage, 22 fathoms, 6 dead.

Gibbula reedi, n. sp. Pl. xxix., fig. 5.

Shell solid, depressed conoid. Whorls, 4 smooth, flatly convex, slightly hollowed just below the suture. Summit blunt. Suture impressed. Periphery round, barely angulate. Base convex. Umbilicus moderate. Aperture oblique, roundly elliptical; outer lip simple, bevelled inside; a short thin glaze on the base of the whorl; columella arcuate, everted posteriorly, with a tiny notch where it joins the round basal lip at the end of the bordering lira of the umbilicus; throat smooth and iridescent. Sculpture: the dorsum looks as though it were spirally lirate, but is really quite smooth except for very fine miscroscopic curved retrocurrent accremental scratchings. On the base are about a dozen fine spiral incisions, with radial scratch-marks more valid and distant than on the dorsum; these are still stouter and wrinkling within and near the perforation. An inconspicuous lira borders the umbilicus, which has a shallow groove just above it. Colour, chestnut-brown, with dark-brown spiral hair-lines of varying width; dotted with tiny white spots, which, below the suture, are aggregated into small pyramidal blotches with their apex upward, six in the body-whorl. A white band, scalloped on both edges of these aggregated dots, encircles the periphery. An articulated white-and-brown spiral ornaments the lira bordering the umbilicus, a second lies just outside this, and another with more distant double white spots beyond; the rest of the base, which is of a lighter tint than the dorsum, has scattered tiny white dots. The umbilicus is white. Over all is a transparent glaze, with a bronze reflex.

Dim.—Greatest diameter, 6·2 mm.; smallest, 5 mm.; height, 3 mm. The species may reach 7·2 mm.

Locality.—The beach, Holdfast Bay (Tate); Leven's Beach, Yorke Peninsula (Zietz). It seems to be quite littoral. I have not dredged it.

There may be a faint gutter where the labrum joins the body-whorl. The colour may be dark-brown. The peripheral white band may fade out toward the aperture. The white blotches beneath the suture and the articulated bands around the perforation seem the most constant ornament.

It was formerly called in South Australia *Gibbula Fesserula*, Ten. Woods, and was so catalogued as No. 348 in Adcock's Handlist of the Aquatic Moll. of South Australia, 1893, but his species has been recognized as an immature *Diloma Adelaidæ*, Philippi.

It has been named after Mr. Walter Reed, a South Australian collector, who took it on our shores.

Adeorbis kimberi, n. sp. Pl. xxix., figs. 1, 2.

Shell minute, translucent, oval. Whorls $2\frac{1}{4}$. Spire very low. Apex blunt; protoconch half a whorl, its apex buried, smooth, rounded, marked off from the spire-whorl by a scar. Suture impressed, slightly excavate. Periphery sharply carinate. Base very flatly rounded, and pressed flat at the carina. Umbilicus very wide and not defined. Aperture roundly oval, nearly on the basal plane; outer lip uniformly round, simple, thin, pinched into a minute gutter close to the suture; inner lip is a thin glaze over the body-whorl. Columella slightly arcuate, its edge posteriorly expanded and reflected over the umbilicus. Sculpture: crowded fine microscopic curved accremental lines; on the base more valid and fewer, and as radiating curved wrinkles, which faintly crinkle the carina.

Dim.—Greatest diameter, 3·7 mm.; smallest, 2·9 mm.; height, 1·2 mm.

Locality.—Aldinga (Kimber). Dredged in St. Vincent Gulf in about 20 fathoms (Verco).

Diagnosis.—It is allied to *A. angasi*, Adams, but has not the distant tubercles on the carina.

It is named after the collector who found it.

Torcula runcinata, Watson. Pl. xxix., fig. 14.

Turritella runcinata, Watson, Proc. Linn. Soc., Lond., 1881, vol. xv., p. 218; Chall. Zool., 1886, Gasteropoda, vol. xv., p. 475, pl. xxx., fig. 3.

An individual of 38 mm. in length was dredged alive.

The radula is exceedingly small compared with the size of the shell. It has a somewhat quadrate rachidian tooth, finely denticulated, along the edge of its upper border, bent forward at a sharp angle. The single lateral is transversely rhomboidal, about twice as large as the central, and is also finely denticulate along the free edge of its bent-forward upper margin. The two marginals, elbowed about their middle, have a flange projecting from their upper border, and finely dentate. Miss J. Donald, in a paper on "Some Recent Gasteropoda, referred to the Family Turritellidæ, and their Supposed Relationship to the Murchisoniidæ," read January, 1900, and published in Pro. Mal. Soc., London, 1901, p. 47, etc., mentions *T. runcinata*, Watson, among other species of *Turritella*, and from their deep labral sinus suggests their affinity with *Murchisonia*. The Pleurotomariidæ and Murchisoniidæ are regarded as belonging to the Rhipidoglossa. But the radula of *T. runcinata*, Watson, plainly places it among the Tænioglossa, and allies it with the ordinary forms of *Turritella*, rather than with *Murchisonia*. If therefore *Murchi-*

sonia is to be associated with those *Turritellas* which Miss Donald has grouped under a new section, *Colpospira*, because of their deep sinus, this group must still be placed among the Turritellidæ, and *Murchisonia* must be shifted with them into the same family, among the Tænioglossa, and separated from the Pleurotomariidæ and other Rhipidoglossa. But the resemblances in the test of her *Colpospira*, and of *Murchisonia* are scarcely sufficient to justify this.

Actæon roseus, Hedley, *var.* **areatus,** new var.

Actæon roseus, n. sp., Hedley, Proc. Linn. Soc., New South Wales, 1905, p. 535, pl. xxxiii., f. 42. Type locality—Wyargine Point, Middle Harbour, Sydney; also Eden, New South Wales.

Our South Australian shell has a shorter spire and a longer aperture; also two white spiral bands and several undulating axial bands, which break the colour up into oblong blotches. Dredged in 18 fathoms, Investigator Strait; 22 fathoms, Yankalilla Bay; 15 fathoms, off Point Marsden, Kangaroo Island; and 25 fathoms, Thorny Passage, Spencer Gulf; all dead.

Actæon retusus, n. sp. Pl. xxix., fig. 12.

Shell oval, shining, translucent, yellowish-white, thin, of six whorls. Protoconch of one whorl, apex immersed, convex, quite smooth, ending abruptly in an oblique retrocurrent scar. Spire whorls roundly shouldered immediately below the suture, then convexly sloping. Suture deeply narrowly channelled. Body-whorl roundly-obliquely cylindrical. Aperture obliquely-arcuately pyriform. Outer lip simple, smooth inside, finely-crinkled outside, very slightly compressed above its centre; basal lip well-rounded, its inner half distinctly everted. Columella with a wide, simple oblique fold just below the base of the body-whorl, over which the thin inner lip is applied to join the labrum at the suture. Umbilicus small.

Spiral incisions, six in the penultimate, forty in the body-whorl, extending to the columella, where they become crowded and fine. Very delicate, close-set, axial striæ cross the incisions, which they punctate, climb, and crenulate their sides, and traverse the intervening flat spiral bands.

Dim.—Length, 9·4 mm.; breadth, 6·1 mm. Length of aperture, 6·5 mm.; width, 2·9 mm.

Locality.—Type, 200 fathoms, off Beachport, with two other examples; also in 100, 110, and 150 fathoms; off Cape Jaffa in 90 and 130 fathoms; N.W. of Cape Borda in 60 fathoms. In good condition, but none alive.

Diagnosis.—It differs from *A. roseus*, Hedley, var. *areatus*, Verco, in having a much less acute apex, a more elevated spire, narrower incisions, more crowded axial striæ, a less pro-

nounced columellar fold, and the absence of the colour-pattern.

Variations.—One shell is somewhat more ventricose, another more elate, with more valid axial striæ; the former has two faint rusty blotches of colour on the dorsum of the body-whorl, a little below the suture; the latter has the trace of a pinkish tinge.

Pupa intermedia, Angas.

Buccinulus intermedius, Angas, Proc. Zool. Soc., London, 1878, p. 862, pl. liv., f. 11. Type locality, Aldinga.

Adcock, Handlist of Aquatic Moll. of S. Austr., 1893, p. 10, No. 424.

Solidula intermedia, Angas, Pilsbry., Man. Conch, vol. xv., 1893, p. 145, pl. xxa, figs. 55, 56.

It has been dredged dead in Hardwicke Bay, Spencer Gulf, Investigator Strait, St. Vincent Gulf, and Backstairs Passage, at all depths from 14 to 22 fathoms, and at 62 fathoms N.W. of Cape Borda. It has been taken alive at 15 fathoms, Investigator Strait.

It exhibits the following variations:—The middle third of the body-whorl may be slightly concavely compressed. The axial sculpture may vary from microscopic accremental striæ, just punctating the spiral incisions, when these are narrow, or crenulating their edges when wider, up to fairly well-marked oblique striæ, which divide the wide incisions into squarely-rounded shallow pits, and cross the intervening flat riblets. The spiral incisions may be equidistant all over the body-whorl, or absent from the upper half of the body-whorl, or they may be trebly distant here. They may be merely very fine and shallow punctate engravings, or rather wide furrows with crenulated edges, or latticed into squarish pits. But all variations grade into one another.

Pupa hyalina, n. sp. Pl. xxix., fig. 11.

Shell minute, diaphanous, fusiformly oval, five whorls. Protoconch distinct, glassy, smooth. Suture adpressed. Whorls sloping, convex. Aperture narrow, long, and pyriform. Outer lip uniformly curved, simple, thin, continued into a round basal lip, which is thickened towards the columella. The inner lip is a thin glaze over the body-whorl, and is expanded slightly beyond the pillar over the perforation. There is a curve of the columella forming a plait running into the basal lip, and a second well-marked oblique plait where the pillar joins the body-whorl. The spire-whorls have sublenticular wavy spiral incisions, which also cover the body-whorl, being most marked at the base, and nearly as well marked below the suture. Very fine, rather sinuous, accremental striæ. Colourless.

Dim.—Length, 3 mm.; diameter, 1·5 mm.; length of aperture, 2·2 mm.

Locality.—Fowler and Streaky Bays (Tate).

Myodora tasmanica, Tenison Woods.

Myodora Tasmanica, n. sp., Ten. Woods, Proc. Roy. Soc., Tasm., 1875 (1876), p. 160. Type locality—Long Bay, Tasmania. Tate and May, Proc. Linn. Soc. N.S.W., 1901, vol. xxvi., part 3, p. 422, pl. xxvii., figs. 104-106.

Dredged off Beachport in 100 fathoms, 5 valves; in 110 fathoms, 50; in 150 fathoms, 2; and in 200 fathoms, 2 valves. It was not taken in shallower waters off the same place, and has not been taken on the South Australian beaches. It appears not to have been recorded from Victoria nor from New South Wales.

Crassatellites kingicola, Lamarck.

This shell was referred to by me in these Transactions, vol. xxix., 1905, p. 169, as *C. ponderosus*, Gmelin. It appears now that our *C. castanea*, Reeve, should be regarded as a variety of *C. kingicola*, Lamarck.

It has been dredged in a subfossil state in soft limestone in the Port Adelaide Channel. One valve was taken in 40 fathoms, and two in 100 fathoms off Beachport, both small and poor. Hitherto, therefore, its habitat has been very restricted as to depth, viz., from 15 to 20 fathoms.

Crassatellites discus, Hedley.

Crassatellites discus, Hedley, Records Austr. Mus., vi., 1907, p. 300, pl. lvi., figs. 26-27. Type locality, 80 fathoms, off Narrabeen, New South Wales.

None were dredged alive, but valves in good condition were obtained. Off Beachport, at 40 fathoms, 31 valves; at 49 fathoms, 22 valves; at 100 fathoms, 4 valves; at 110 fathoms, 20 valves; at 150 fathoms, 17 valves; and at 200 fathoms, 2 valves. Off Cape Borda, at 55 fathoms, 7 valves; and at 62 fathoms, 5 valves. Off Cape Jaffa, in 130 fathoms, 14 valves. This seems not to occur in the gulfs of South Australia, but to be an ocean form, and to affect the deeper waters.

Crassatellites carnea, Tate.

Crassatella carnea, Tate, Trans. Roy. Soc., S. Austr., vol. xiv., p. 263, pl. xi., f. 1, 1a. Type locality—Yankalilla Bay.

It has been dredged alive at all depths from 9 to 23 fathoms, most abundantly from 20 to 23 fathoms. Valves have been taken, small and in poor condition, off Beachport at 110 and 200 fathoms, and off Cape Jaffa, in 90 fathoms. Comparatively large valves were taken off Beachport in 40

fathoms, the largest being 25 mm. antero-posteriorly, and 20 mm. umbo-ventrally. Tate, in his original diagnosis, remarked: "This species is very like *C. aurora* and *C. Banksii*, Adams and Angas, inhabiting Bass Straits, with regard to colour, ornament, and crenated margin of valves. It is, however, of a different form, is as widely removed from *C. aurora* as that species is from *C. Banksii;* thus, *C. Banksii* is oblong-ovate, *C. aurora* transversely ovate, and *C. carnea* is more rotund. They may eventually prove to be variations in shape of an aggregate species."

The proportion of length to height in *C. aurora* is 24 to 17, or as 100 to 71. That of Tate's type is 22 to 19, or 100 to 86·8. That of my largest is 25 to 20, or 100 to 80. Therefore my largest shell approximates somewhat more to the type of *C. aurora* than does Tate's type of *C. carnea,* but is still much shorter; and as my larger shell is larger than Angas's type, and is nevertheless shorter, and is an old stout shell, the difference is not explained by the senility of Angas's shell. *C. carnea* may consequently be retained for the present as a distinct species.

Crassatellites banksii, Adams and Angas, *var. angustior;* n. var.

Crassatella banksii, Adams and Angas, Proc. Zool. Soc., Lond., 1863, p. 427, pl. xxxvii., fig. 16. Type locality—Banks Straits. Conch. Cab. Kuster, 1886, bd. x., abt. i., p. 26, pl. vii., f. 14.

In 55 fathoms north-west of Cape Borda I dredged 16 small and 33 large valves of a species which corresponds with *C. Banksii* in its oblong-ovate shape and truncated posterior end and colouring. Its dimensions, however, do not correspond. It is narrower antero-posteriorly for the same height. *C. banksii* is 16 mm. long by 10 high; mine are 12 mm. long by 10·2 high—hence the name *angustior.* My largest specimen is 23 mm. by 20·5. To be in proportion it should be 32·8 mm. long instead of 23. I have preferred to call it a variety rather than create another species based on this one difference. It has not occurred elsewhere in my dredging.

Crassatellites producta, Verco.

Crassatella producta, n. sp., Trans. Roy. Soc., S. Austr., 1895, vol. xix., p. 92, pl. 1., f. 2.

Fifty valves were dredged off Cape Borda in 55 fathoms, in very good condition. Beyond this depth in the same neighbourhood at 60 and 62 fathoms; off the Neptunes, in 104 fathoms; and off Beachport, in 110 fathoms; from one to six valves in poor preservation were obtained, and none beyond. Its habitat is probably from 15 to 20 fathoms, up to 50.

Crassatellites micra, Verco.

Crasatella micra, Verco., Trans. Roy. Soc., S. Austr., 1895, vol. xix., p. 93, pl. 1, fig. 3.

Previously dredged alive in 20 and 22 fathoms; one has since been taken alive in 16 fathoms, three miles off Tunk Head, and one perfect individual and 11 valves in 62 fathoms north-west of Cape Borda. Valves have been obtained off Beachport, 10 in 49 fathoms, and 12 in 110.

Crassatellites probleema, n. sp. Pl. xxix., figs. 6, 7.

Shell transversely-orbicularly oval, solid, projecting anteriorly. Umbo prominent, incurved, prosogyre, acute. Postdorsal side roundly sloping; anterior dorsal side concave near the umbo, then nearly straight, continuing into a well-rounded front side; ventral border with a uniform open curve, merging into the slope of the posterior side, with an inconspicuous round angulation. The surface is corrugated with about twenty solid wide concentric ribs, more projecting at their upper border, wider than their interspaces. For about 2·5 mm. from the apex the surface is smooth. Inner border simple and smooth. Colour light horn-tint.

Dim.—Antero-posterior diameter, 10·3 mm.; umbo-ventral, 9·4 mm.; sectional of the two valves, 4·25.

Locality.—Off Beachport, in 100 fathoms, 2 valves; 150 fathoms, 14 valves.

Diagnosis.—In shape it is very like *C. micra,* Verco; but this is a much smaller shell, with an equal number of concentric ribs, and these extend quite up to the apex. It closely approaches *C. discus,* Hedley, in the smooth area near the umbo, and in the marked concentric ribbing, but has the front much more produced, and the postero-lateral area not flat or truncated at the border.

Variations.—In some the angle at the umbo is more acute and in others less than in the type, so that the shell is proportionally narrower or wider. In some, especially the wider ones, there is a tendency to slight truncation in the posterior part of the ventral border.

Lima multicostata, Sowerby.

Lima multicostata, Sowerby, Thes. Conch., 1847, vol. 1, p. 85, sp. 6, pl. xxii., f. 38. Type locality—"Mediterranean (?)" Reeve's Conch. Icon., 1872, vol. xviii., pl. 1, f. 4; E. A. Smith, Chall. Rep., Zool., vol. xiii., 1885, p. 288; Tate, Trans. Proc. Roy. Soc., S. Austr., 1886, vol. ix., p. 108; Tate and May, Proc. Linn. Soc., N. S. Wales, 1901, vol. xxvi., part 3, p. 440; Pritchard and Gatliff, Roy. Soc., Vict., 1904, vol. xvii., (N.S.), part 1, p. 259.

Radula lima, Linné, Angas, Proc. Zool. Soc., Lond., 1865, p. 656, No. 91; Ten. Woods, Proc. Roy. Soc., Tasm., 1878, p. 56.

Lima lima, Linn, *var. multicostata,* Sowerby, Hedley, Mem. Austr. Mus., vol. iv., 1902, p. 309.

Dredged alive at all depths, from 9 to 30 fathoms; embedded in sponge or attached inside dead *Pinna inermis*, etc. Off Beachport and Cape Jaffa, valves only, at 49, 110, 130, and 200 fathoms. One specimen, at 110 fathoms, off Beachport, has 45 ribs; usually they have from 25 to 30.

Lima bullata, Born.

Ostrea bullata, Born., Mus. Caes. Vindobon, 1780, p. 110, pl. vi., f. 8; Dillwyn, Desc. Cat., 1817, p. 270.

Lima bullata, Born., Sowerby, Thes. Conch., 1843, vol. i., p. 84, pl. xx., f. 32, 33; Hanley, Cat. Rec. Bivalve. Shells, 1843, p. 266; Sowerby in Reeve's, Conch. Icon., 1872, vol. xviii., p. 1, f. 3 *a* and *b;* Tate, Trans. Roy. Soc., S. Austr., 1886, vol. ix., p. 109, No. 162; Adcock, Handlist Aquatic Moll., S. Austr., 1893, p. 14, No. 202; Hedley, Mem. Austr. Mus., vol. iv., part 5, 1902, p. 310.

Radula (Limatula) bullata, Born., Angas, Proc. Zool. Soc., Lond., 1865, p. 656, No. 93.

Lima (Limatula) bullata, Born., Tryon, Struct. and Syst. Conch., 1884, vol. iii., p. 287, pl. 132, f. 93; E. A. Smith, Chall. Zool., 1885, vol. xiii., p. 292; Tate and May, Proc. Linn. Soc., N.S. Wales, 1901, vol. xxvi., part 3, p. 440; Pritchard and Gatliff, Proc. Roy. Soc., Vict., 1904, vol. xvii. (N.S.), part 1, p. 260.

Lima strangei, Sowerby, in Reeve's Conch. Icon., 1872, vol. xviii., pl. 1, f. 3*a*, *b*.

Dredged alive at Port Lincoln in 9 fathoms, 1 very small; in Backstairs Passage in 18 fathoms, 1, and in 20 fathoms, 4, so that it is very rare in deep water. Valves have been taken off Beachport, Cape Jaffa, and off the Neptune Islands at 40, 60, 90, 100, 150, and 200 fathoms, generally in poor condition, especially the larger examples.

Lima angulata, Sowerby.

Lima angulata, Sowerby, Thes. Conch., 1843, vol. i., p. 86, pl. xxii., f. 39 and 4. *Type locality.*—Panama and Bay of Caraccas, 10 to 12 fathoms. Sowerby, in Reeve's Conch. Icon., 1872, vol. xviii., pl. iii., f. 13; Tate, Trans. Roy. Soc., S. Austr., 1886, vol. ix., p. 109; Adcock's Handlist, 1893, p. 14, No. 201; Hedley, Mem. Austr. Mus., 1902, vol. iv., p. 310.

Radula (Mantellum) angulata, Sowerby, sp. Angas, Proc. Zool. Soc., Lond., 1865, p. 656, No. 92.

In Hardwicke Bay, Spencer Gulf, they occur in enormous numbers, from near shore to fifteen miles out, forming nests of small shells and fragments of shell in dead *Cardium* valves, etc., in about 15 fathoms. They have also been dredged at all depths from 9 to 24 fathoms, alive, throughout Spencer and St. Vincent Gulfs and Backstairs Passage. Off Beachport 4 well-preserved valves were taken in 110 fathoms, and 5 in 200 fathoms. It appears not to have been secured in Victoria or Tasmania, though taken off the coast of New South Wales in 50 and 75 fathoms, as valves.

Limæa murrayi, Smith.

Lima murrayi, Smith, Proc. Zool. Soc., Lond., 1891, p. 444, pl. xxxv., f. 26.

Limæa murrayi, Smith, Hedley, Records Austr. Mus., vol. vi., part 3, 1906, p. 223.

L. acclinis, Hedley, Records Austr. Mus., vol. vi., part 2, 1905, p. 46, f. 10. *Type locality.*—100 fathoms off Wollongong, also 300 fathoms east of Sydney Heads, N.S. Wales.

Dredged, separate valves, off Beachport, in 100, 110, 150, 200 fathoms; off Cape Jaffa in 130 and 300 fathoms; and in 104 fathoms, 35 miles south-west of Neptune Islands.

Limæa austrina, Tate.

Limæa austrina, Tate, Trans. Proc. Roy Soc., S. Austr., vol. ix., 1886, p. 73, pl. iv., f. 7.

This is a common shell in deeper water. It has been dredged alive, at all depths, from 15 to 22 fathoms in Investigator Strait, Backstairs Passage, and off Newland Head; 1 in 8 fathoms, Eastern Cove, Kangaroo Island; and 1 in 49 fathoms, Beachport. It seems to be most abundant about 20 fathoms. Valves have been obtained in Spencer and St. Vincent Gulfs; as far east as Beachport, where it has been taken at 40 and 49 fathoms in numbers, and good; at 100, 150, and 200 few and poor; and as far west as Cape Borda and the Neptunes, in 45 and 55 fathoms.

EXPLANATION OF PLATE XXIX.

1. *Adeorbis kimberi*, Verco, ventral view.
2. ,, ,, ,, side view.
3. *Cyclostrema homalon*, Verco, dorsal view.
4. ,, ,, ,, side view.
5. *Gibbula reedi*, Verco.
6. *Crassatellites probleema*, Verco, exterior.
7. ,, ,, ,, interior.
8. *Leptothyra carinata*, Verco.
9. *Cyclostrema denselaminatum*, Verco.
10. ,, ,, *pachyston*, Verco.
11. *Pupa hyalina*, Verco.
12. *Acteon retusus*, Verco.
13. *Arcularа dipsacoides*, Hedley, radula.
14. *Toreula runcinata*, Watson, radula: A., rachidian; B., lateral; C.D., marginals.